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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,604	11/03/2004	Christian Walsdorff	260781US0PCT	5703

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EXAMINER

NGUYEN, NGOC YEN M

ART UNIT PAPER NUMBER

1754

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/511,604

Applicant(s)

WALSDORFF ET AL.

Examiner

Ngoc-Yen M. Nguyen

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2, it is required that all of the unreacted hydrogen chloride is recirculated, however, it is unclear if this is for the before or after the "gradually increased" as required in the independent claim 1. If this is before, then the amount of recycled unreacted hydrogen chloride cannot be increased.

In claims 1, 7, "gradually increased" is indefinite because in the instant specification, there is no disclosure to teach or suggest to one skilled in the art what is considered as "gradually". It should be noted that in the instant specification, it is disclosed that the "gradual deactivation of the catalyst can be reduced by increasing the proportion of recirculated hydrogen chloride (increasing the recycle ratio); this increases the operating life of the catalyst" (note page 4, lines 14-17), but there is no disclosure of how slow or fast for the claimed "gradually increased" in the recycle ratio.

Claim 7 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper

Art Unit: 1754

dependent form, or rewrite the claim(s) in independent form. In claim 7, the proportion of recirculated hydrogen chloride or recycle ratio is gradually increased during the time of operation of the catalyst in a manner that increases the operating life of the catalyst, this fairly indicates that the scope of claim 1 is broader, i.e., the recycle ratio can be increased in other manner for different effect. However, in the instant specification, the only increasing of the proportion of recirculated hydrogen chloride is only disclosed for increasing operating life of the catalyst.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson '961.

Claims 1-5, 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Johnson et al (2,542,961).

Johnson '961 discloses a process for producing chlorine by contacting oxygen and hydrogen chloride with a chloride of a metal having an atomic number of from 21 to 30 (note claim 1).

As disclosed in Example 1, a mixture of oxygen and anhydrous hydrogen chloride is contacted with a fluidized catalyst consisting of alumina impregnated with

Art Unit: 1754

copper chloride. 53% of the anhydrous hydrogen chloride thus charged to the reactor is recycled from within the system. 58% of the hydrogen chloride charged to the reactor is converted to chlorine per pass (note column 7, lines 55-75). The value of "58%" is well within the claimed ranges for the conversion of hydrogen chloride.

Johnson '961 further discloses that two or more reactors, connected in series or parallel flow may be employed (note column 4, lines 10-20).

The molar ratio of hydrogen chloride to oxygen may be maintained in the ratio of from about 1.5 to 15, preferably from about 2 to 7.5. These ranges at least overlap the claimed ranges. With respect to the encompassing and overlapping ranges previously discussed, the subject matter as a whole would have been obvious to one of ordinary skill in the art at the time of invention to select the portion of the prior art's range which is within the range of the applicants' claims because it has been held prima facie case of obviousness to select a value in a known range by optimization for the results. *In re Boesch*, 205 USPQ 215. Additionally, the subject matter as a whole would have been obvious to one of ordinary skill in the art at the time invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness. *In re Malagari*, 182 USPQ 549.

For value other than "58%" for the HCl conversion, for the proportion of recirculated HCl and for the points of introduction of the oxygen, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize

these process conditions in Johnson '961 through routine experimentation in order to obtain the best results.

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 1,046,313 in view of Johnson '961.

GB '313 discloses a process for producing chlorine by oxidizing hydrogen chloride in the presence of a ruthenium catalyst. From the table on page 2, the % conversion varies from 40-79%.

The ratio of hydrogen halide to oxygen may be between five times the stoichiometric ratio to one fifth of this ratio. This range overlaps the claimed ranges. See In re Malagari as stated above.

The differences are GB '313 does not teach the recycle step or the use of multiple reactors.

Johnson '961 is applied as stated above the teach that the use of multiple reactors and the recycle step are known and conventional in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use multiple reactors and to recycle hydrogen chloride, as suggested by Johnson '961, for the process of GB '313 because these steps are conventional and advantageous for an analogous process.

Applicant's arguments filed December 23, 2005 have been fully considered but they are not persuasive.

The rejection over Walsdorff '718 is withdrawn since the foreign priority has been perfected.

All 102 rejections are withdrawn in view of Applicants' amendment to the claims.

Applicants argue that Johnson does not suggest or provide a reasonable expectation of success that the catalyst life can be increased.

It should be noted that in Applicants' claim 1, an increase in the life of the catalyst is not required. It would have been obvious to optimize the HCl recycle ratio to obtain the best overall effect for the process of Johnson '961. Even though it is disclosed in Applicants' specification that the "gradual deactivation of the catalyst can be reduced by increasing the proportion of recirculated hydrogen chloride", however, the "gradually increased" of the proportion of recirculated hydrogen chloride to reduce the "gradual deactivation" of the catalyst may be insignificant to be a patentable difference.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

Art Unit: 1754

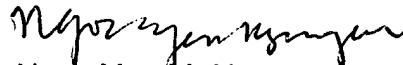
extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc-Yen M. Nguyen whose telephone number is (571) 272-1356. The examiner is currently on Part time schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Stanley Silverman can be reached on (571) 272-1358. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 or (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed (571) 272-1700.


Ngoc-Yen M. Nguyen
Primary Examiner
Art Unit 1754

nmn
March 6, 2006